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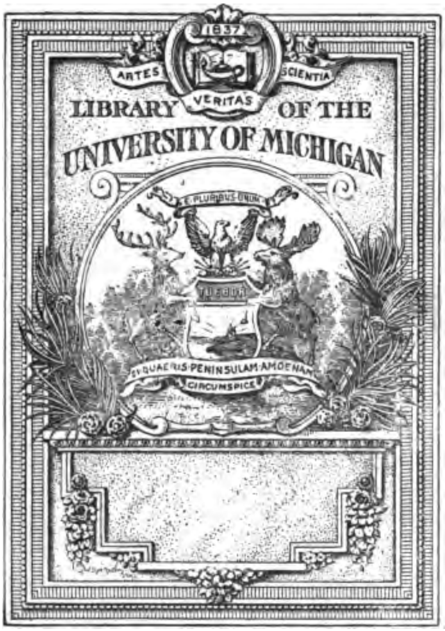

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# COST ACCOUNTS:

## THE KEY TO ECONOMY IN MANUFACTURE.

BY

illiam

## W. STRACHAN

*INCORPORATED ACCOUNTANT,*
*(Of the firm of* MARTIN, FARLOW & CO.),
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# PREFACE TO FIRST EDITION.

THIS book does not profess to be an exhaustive treatise on Cost Accounts. It has been written with a two-fold object. In the first place it is hoped that it may fall into the hands of manufacturers and be the means of helping them to realise the advantages to be reaped from the adoption of a proper system of Cost Accounts. Generally speaking—there are of course notable exceptions—it is an undoubted fact that there is in this country a great need of a fuller appreciation of those advantages, and it is one of the duties which professional accountants owe to their clients to see that they do not remain uninformed as to the means within their reach of obtaining information which must prove invaluable to them.

It is hoped that the short statement as to the benefits of Costing, given in the opening chapter, may be of service to professional accountants in introducing the subject to their clients, and that the book as a whole may be sufficiently intelligible to the lay mind to convey a general idea of how the results are achieved.

The second object of the work is to give a short outline of the methods of keeping Cost Accounts applicable to different classes

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of manufactures, for the benefit of those engaged in accountancy who are not already conversant with the subject. The endeavour has been to adhere chiefly to leading principles, leaving details to be supplied according to requirements and circumstances by the accountant who is employed to initiate the system.

It has been felt that the only case in which a detailed description of a system is of any real value is where some particular industry is taken as a basis, and a set of accounts specially applicable to that industry actually worked out and explained.

W. S.

*November*, 1902.

## PREFACE TO SECOND EDITION.

In issuing the Second Edition an opportunity has been taken to meet the wishes of numerous readers by adding an Appendix of Forms, with specimen entries, for the purpose of illustrating the text, and enabling the system to be more readily comprehended. Explanatory notes are given at the foot of the forms, and also references to the pages of the book where further details will be found.

W. S.

4, King Street, Cheapside,
London,
*December*, 1903.

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# COST ACCOUNTS:

*THE KEY TO ECONOMY IN MANUFACTURE.*

## THE PRACTICAL VALUE OF COST ACCOUNTS.

**Loss and Waste of Goods.**

INHERENT in every commercial man is a tendency to take all reasonable care that he is not robbed of his cash, but can it be said that he takes equal care of his goods? The answer in many cases must be an emphatic negative. Of his money he causes an accurate record to be kept, and sees that his Cash Book is regularly balanced and even vouched, but as regards his goods he is satisfied if at the end of the year he is told that his purchases have been so much, that there is so much stock in hand, and that therefore the cost of the goods sold must be the balance. It is precisely equal to balancing the Cash Book by taking the receipts for the twelve months, counting the cash that is found to be in the box, and assuming that the difference must have been the payments during the year. In a retail business there is, of course, the approximate check that the trader reckons to have been making a certain percentage of gross profit, and he may be suspicious if it works out at a lower figure; but in a manufacturing business there is not even this rough and ready means of setting doubts and fears at rest. The raw materials are bought, passed through a process of manufacture, and sold as finished goods, and it would be a large discrepancy indeed that would be disclosed by the trading results. Everything depends upon the honesty of the employés and the vigilance of the watchman, unless a record is kept of goods coming in and being used in manufacture. But apart from the actual dishonest removal of goods, speaking more particularly of a factory, much waste and destruction of material may pass unnoticed unless a proper record is kept.

**What Cost Accounts will show.**

All this can readily be avoided and much information of inestimable value to the manufacturer can be acquired by the keeping of a simple system of Cost Accounts, which will show him—

(1) Whether the stores purchased have all been duly accounted for;

(2) Whether the buying has been judicious;

(3) The cost of production sub-divided into departments, processes, or individual jobs or contracts, as may be desired;

(4) Where he is gaining, and where he is working at a loss;

(5) In what direction his energies can be applied with the greatest advantage.

In brief, Cost Accounts are the key to economy in manufacture, and are indispensable to the intelligent and economical management of a factory.

**Necessity of Adaptation.**

In considering Account-keeping of any description, it is necessary to bear in mind that the accounts must be shaped for the business, and not the business for the accounts. Self evident as this proposition may appear, it is not always carried into practice. It is not unusual to find a practitioner acting somewhat after the fashion of the quack doctor, whose one nostrum is of a cosmopolitan character, and acts as a salve for every sore. Every business, whether manufacturing or trading, has its own particular needs and peculiarities, and in framing accounts the ingenuity of the accountant must be directed towards supplying the needs while at the same time adapting himself to the peculiarities. Very few undertakings will be found exactly alike. There will always be some little differences for which allowance must be made, and the first thing to be ascertained is, what does the proprietor want to know; what information will be of the greatest assistance in enabling him to carry on his business successfully amid the keen competition which he has to face?

**Requirements of different Businesses.**

A retail trader will require to know one thing; a manufacturer's requirements will be quite different. Again, one retailer may find it sufficient for his purpose to know the gross and net results of his operations as a whole, while another may find it very advantageous to divide his trading into departments, so as to show departmental results. Further than this, traders and manufacturers do not always know what their requirements really are, or they imagine that what they would like to ascertain can only be arrived at by a process which consists largely of guess-work. Every commercial man endeavours (it may be unconsciously) to carry on in his own mind a system of costing—a very imperfect system it must be, but the nearer approach he makes to accuracy the more success he is likely to achieve.

**Estimates.**

In a manufacturing concern especially, it is impossible for a person, with any degree of confidence, to give an estimate or enter into a contract unless he knows what a similar piece of work has actually cost him. In these days of keen competition, contracting is daily becoming more popular, and it thus becomes more and more necessary that accurate results should be arrived at. For the retailer the ordinary commercial books can easily be adapted to give all the information that is required, but in the case of a manufacturer a system of cost accounts is indispensable. His commercial books may show him his gross and net profit on the business as a whole, but unless he knows exactly from what source such profit has been derived, it is of little practical benefit to him in the management of his business. For instance, he may, unknowingly, be making a large profit in one department, while he is working at a loss in another, the difference being represented by the profit on the whole. So many items enter into the cost of a manufactured article, that it is exceedingly difficult, by a mental process, to arrive even approximately at the real cost of production, and rough calculations nearly always result in under-estimates, for the reason that some items which go to make up the cost are apt to be altogether overlooked, as, for instance, management expenses, depreciation, or interest.

**Aggregate results misleading.**

**Cause of Failures.**

The successful man is the man who knows exactly where the strong and weak points of his business lie, and who can therefore apply his energies where they will produce the best results, and the secret of many a man's failure lies in the want of this knowledge more than in the want of energy or business capacity.

**Foreign Competition.**

The scientific application of accounts to the ascertaining of the cost of production is one of the greatest needs of our time. We are not keeping pace with other nations in this respect, and the consequence is that we are aggravating for ourselves the difficulties of foreign competition. Take, for example, the United States of America, our greatest competitor of the future, if not indeed of the present. We are behind the Americans, not only in improved mechanical appliances, but in the application of the science of accounting to show where those appliances can be introduced with advantage.

**The Province of the Professional Accountant.**

At the present time, the average man of business does not look upon his accountant as of any direct assistance to him in the shaping of his plans. He rather regards him as the scrutineer and compiler of aggregate results. This is not as it should be, and if we are to retain our position among the nations as the first in commerce and manufactures, a change must take place. The fault, too, lies more at the door of the accountant, who should be able to see his client's needs and point out a remedy, than with the manufacturer who may feel that he does not possess the information he desires, but may be unaware of the source from which it can be obtained.

# CLASSIFICATION AND METHOD OF TREATMENT.

Having endeavoured to show that a proper system of costing is essential to the economical management of every manufacturing business, we will now proceed to outline the manner of carrying it into effect, and the chief points that have to be taken into consideration.

**Constituents of a Commodity.**

The cost of an article may be divided into three parts, namely:—

(1) Material.
(2) Labour.
(3) Indirect charges, including—
  (*a*) Departmental charges, and
  (*b*) Expenses of administration and distribution.

There are many different ways in which these parts may be combined, and the accounts must be framed accordingly. The first thing to be ascertained is—what does the proprietor want to know? As already pointed out, this will depend largely upon the nature of the undertaking, but speaking generally, he will require to know:—

**Requirements of a Manufacturer.**

(1) The result of the buying.
(2) The cost of manufacture.
(3) The cost of sale.
(4) The sectional profits.

Manufacturing cost is made up of numerous items, and it is usually advantageous to know not only the total, but the component parts. How far this subdivision is advisable must be decided in each individual case. The following classification of manufactures will therefore facilitate a clearer exposition of the different methods of costing required to cover the whole range:—

**Classification of Undertakings.**

(1) Undertakings where there are several more or less distinct departments, each producing a certain class of goods, and where departmental results only are required.

(2) Undertakings where the work consists entirely of contracts and orders, the individual results being required.

(3) Undertakings where the elements of Nos. 1 and 2 above are combined, and it is required to know results of departments, and also of individual contracts, which may be wholly exe-

cuted in one department or may pass through several departments.

(4) Undertakings where commodities undergo a continuous process of manufacture, and the cost per ton or other unit of each stage of that process is required.

(5) Undertakings where small articles of a miscellaneous character are manufactured, passing through one or more departments, and it is required to ascertain, prove and confirm the cost of the individual items or groups of items.

**Outline of procedure.**

Having ascertained the requirements of the proprietor, the best possible system must be devised to supply the requisite information, and it will be the endeavour in these pages to outline briefly how this can be done. It is proposed to first deal with Classes 1, 2 and 3, viz., departmental results and specific jobs or contracts, and afterwards to discuss the difference in procedure applicable respectively to Classes 4 and 5, viz., manufacture by process and the production of small articles. Many elements in the system are common to all, but on the other hand some important variations have to be made to meet special requirements.

## DEFINITIONS.

In order to avoid confusion and misconception it will be advisable, before proceeding to outline the Costing System, to state what certain of the terms used in this work are intended to indicate. This is necessary because sometimes a wider and sometimes a narrower meaning is attached to them.

*Stores.*—The supplies of raw material or partially completed articles which are intended to undergo a further process of manufacture.

*Storeroom.*—The building where these stores are kept.

*Stock.*—Manufactured goods on hand, whether manufactured on the premises or purchased as completed articles for the purpose of being resold without undergoing any further process.

*Warehouse.*—The building where the stock is kept.

*Indirect Charges.*—Such charges as cannot be assigned specifically to any individual job or contract, *e.g.*, depreciation, salaries, &c.

*Unproductive Labour.*—Such labour as is incidental to but does not form a part of the work attributable to any job or contract, *e.g.*, shop cleaning.

*Shop Cost.*—Cost of material, labour and departmental charges combined, but not including costs of administration and distribution.

*Buying or Market Price* (as applied to Stores).—The price at which a manufacturer can buy such a quantity as he finds it requisite to purchase periodically to supply current demands, in distinction from the higher rate payable for a smaller quantity.

# PART I.

Covering the following:—

(1) Undertakings where there are several more or less distinct departments, each producing a certain class of goods, and where departmental results only are required.

(2) Undertakings where the work consists entirely of contracts and orders, the individual results being required.

(3) Undertakings where the elements of Nos. 1 and 2 above are combined, and it is required to know results of departments, and also of individual contracts which may be wholly executed in one department or may pass through several departments.

## I.—MATERIAL.

Material may consist of:—

(1) The raw article
(2) Completed parts purchased.
(3) Partially completed parts purchased.

**Stores Purchased.**

When material is purchased, it is treated in one of two ways. It is either sent direct to a contract, order or department, or it is taken into the Storeroom to be used as required. In the first case the debit should go to the contract or department, in the second to a Stores Account, the foreman of the department or the storekeeper, as the case may be, signing the delivery note. In the case of Stores going direct to a department a different colour of delivery note should be used, and the number of the job noted thereon.

**Stores Requisitions by Departments.**

In the same way when material is taken from the Storeroom, a Requisition Note bearing the number of the contract or job for which it is required, and a full description of the article should be signed by the foreman of the department, and also by the workman to whom it is delivered, the pricing being left to the Counting House staff.

**Foreman's Signature to Requisition.**

In actual working, it will usually be found practicable to depart from this rule so far as to allow the workmen to obtain goods from the Storeroom on their own signatures only. The foreman can then, say twice a day, run through the Requisition Notes in the Storekeeper's hands and sign them. Should he be in doubt about any item, he can at once refer to the workman whose signature appears on the Requisition Note and thus satisfy himself that it is in order. This arrangement gets over the serious drawback, so often complained of, that the foreman's time is so much taken up attending to stores requisitions that he cannot devote his attention effectively to the general organisation of the work of the department.

**Stores Returned**

Care should be taken that any material ordered in excess of what is actually required is returned to the Storeroom with a Stores Returned Note which should be signed by the Storekeeper.

**Source of Stores Ledger and Cost Ledger Postings.**

The Delivery and Requisition Notes in conjunction with the Stores Returned Notes constitute the source from which on the one hand the Stores Accounts, and on the other hand the Contracts or Departmental Accounts, are entered up.

Stores Received and Stores Issued Books are sometimes kept by the Storekeeper, in which he enters particulars of all goods received and also particulars of each Requisition Note and the account to which it is to be charged, but these can usually be dispensed with, and the Notes themselves used as the posting medium.

The Delivery and Requisition Notes respectively, forms of which are given on page 18, should be numbered consecutively and then passed on to the counting house to be priced and entered up in the Stores Ledger. This is done by sorting the Notes under the heads of the various Stores Accounts, and writing up either in detail or in totals as may be found expedient. The Delivery Notes should also be checked and agreed with the invoices, and care taken that everything is signed for.

It is sometimes advocated that the Stores Ledger should be kept by the Storekeeper himself; but to prevent any loophole for fraud, it is much safer to entrust it to someone who has nothing to do with the handling of the stores. It will be observed that the Storekeeper signs for all he receives and obtains a signature for everything he hands out. These signed Notes, as already explained, form the basis for entering up the Stores Ledger, and consequently at the end of the year or half-year the balances of the Stores Accounts in the Ledger should agree with the inventory

## STORES DELIVERY NOTE.

Stores received into Storeroom.

*No.* ..................

The following articles have been received in good condition from..........................................................................................

*Date*............................................

| Description. | Quantity. | Rate. | Amount. |
|---|---|---|---|
| | | | £ s. d. |

.....................................................*Storekeeper.*

## STORES REQUISITION NOTE.

Department Requisition on Stores.

*No.*.................                *Job or Department No.*..................

Please deliver to bearer the following Stores:—

*Date*............................................

| Description. | Quantity. | Rate | Amount. |
|---|---|---|---|
| | | | £ s. d. |

.............................................................................................*Foreman.*

*Received*.............................................................................................*Workman.*

actually taken. Any discrepancy in this respect should be carefully enquired into as it clearly indicates a leakage.

**Waste and Scrap.**

A certain amount of waste must of necessity take place, as a commodity cannot be received in bulk and distributed in parts without shrinkage. Proper allowance must, of course, be made for this as a departmental charge, apportionable in proportion to the material used.

Scrap material which may be sold from time to time should be credited to the department or job to which it was originally charged.

**Method of Charging out Stores.**

Stores purchased for a specific purpose should always be earmarked for the job, order, or contract for which they are bought and debited against same at cost price, but where Stores are bought for general use—that is, for the convenience of having a quantity in hand, or because a favourable opportunity has presented itself—they should be charged out at the price at which they could be bought at the date when they are actually used.

It is frequently advocated that the charging out should be at cost in every case, so that the balances on the Stores Accounts at any given time should represent the cost price of the Stores in hand. This, however, does not show a true result. Assume for example that a considerable quantity of a certain kind of material has been placed in the Storeroom, and that the market value of same has gone down while there is still a large amount unused. It is unfair to charge a contract with that material at cost price when it could be obtained in the market at the time it is required at a much lower figure. In other words, the contract should not suffer because the value of material in hand happens to have depreciated. If the contract is one open to public competition, the contract price will naturally be regulated and settled upon the basis of current market values, and if the system of charging out at cost is insisted upon, the result on the face of it may be a loss, and the proprietor looking at his books will naturally conclude that he must raise his price for the future, with the result that he will more than likely lose that particular line of business and be left with the balance of his depreciated material still on his hands. Such a course is clearly misleading. If stores have depreciated, it is better to face the fact and debit the contract with current buying prices only, thus showing the real result, for after all the loss is not on the contract but on the material. The question then naturally arises how are the Stores Accounts to be balanced? This presents no difficulty. The record of quantities will show that all materials debited to the Stores Accounts have been accounted for, and when stocktaking time arrives, it will be found that the value of Stores in hand is less than the value shown by the Stores Accounts. The difference is simply depreciation, and should be written off as such. This is more fully explained in discussing the Stores Ledger Accounts.

Apart altogether from the fact that this is a true record of what has taken place, it affords the proprietor a very good object lesson. In going through his Stores Accounts at the end of the year he sees at a glance where there has been depreciation, and as this may have resulted from indiscreet buying of large quantities of fluctuating material, he will doubtless be more careful in time to come. Cost Accounts like other Accounts are intended to record facts, and the fact in this case is that the loss has been occasioned by unwise or unfortunate buying and not by bad contracting, and it should be shown accordingly. The same remark applies where appreciation in value takes place, and generally speaking the correct method is to charge out material at the current buying price, a price list being kept for that purpose and revised periodically. There may of course be cases where it is advisable to depart from this rule, but these must be regarded as exceptions only.

## II.—LABOUR.

**Recording of Time.**

To obtain a correct record of the cost of labour it is necessary not only to have a carefully devised system, but to see that it is strictly enforced. The workmen's time should be checked by the timekeeper in one or other of the approved methods. Perhaps the one most commonly adopted in this country is to have a board at the time office large enough to hang a metal tally for each workman employed. These tallies are numbered consecutively, and each workman as he passes the time office in the morning is handed his tally which he must deposit, upon leaving, in a box provided for the purpose. The timekeeper then enters up his time book from the board, takes the tallies from the box and re-sorts them for the next entry of the workmen. Where a large number of hands is employed this system is found somewhat tedious, and in order to save time each man is allowed to take his own tally from the board and under the supervision of the timekeeper immediately drop it into the

**The Tally System.**

box. Where this plan is adopted the same procedure must be gone through on leaving the works at mid-day, and on re-entering in the afternoon.

**The Clock System.**

There are also in use systems for recording time automatically, which by many are thought preferable, while by others they are unhesitatingly denounced. The Rochester Card Recorder is one of the most complete. It consists of a clockwork mechanism which enables each workman to drop into a slot a card with his number on it, and by pulling a lever the time of entry or of leaving the factory is recorded. The card lasts a whole week and the mechanism is so designed that the bottom of the slot rises automatically day by day, thus ensuring that the time will be printed in the proper space. The cards are not kept by the workmen, but are taken by them from numbered pockets on one side of the clock and, after use, deposited in corresponding numbered pockets on the other side.

**Wages Sheets.**

The wages sheets are prepared at the end of the week by the timekeeper summarising the time of each workman and inserting the rate of pay. The figures are then extended and checked and any necessary adjustments or deductions made. There still remains, however, the important matter of dissecting the time over the different jobs on which the men have been employed. Where a man has been engaged for the whole day on the same work, the dissection is simple, but where, as is often the case, he may in the course of a day be employed on half-a-dozen different pieces of work, for which distinct cost accounts are kept, it is not so easy. In such a case the workman should be required to record his own time on a card supplied for the purpose, and this card should at the end of the day be initialled by the foreman of the department. Each job or contract should have a distinguishing number allotted to it, and this number should appear on the time card in each case. It is an advantage to have a perforated card so that the time on each job can be kept distinct, and the card afterwards split up. Where piece work is the rule the cost of labour can be ascertained with much greater facility. At the end of the day the time cards should be collected and summarised under the heads of the respective departments or contracts, and the weekly total of such summary should agree with the wages sheets.

**Wages Journal.**

From the summary the wages journal is written up, and through this all items find their way to the proper Cost Accounts. The following will be found a convenient ruling for the wages journal :—

# WAGES JOURNAL.

| Department or Contract. | Week Ending. | | | | | | | | | | | | | Total. | Cost Ledger Folio. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan. 3. | Jan. 10. | Jan. 17. | Jan. 24. | Jan. 31. | Feb. 7. | Feb. 14. | Feb. 21. | Feb. 28. | Mar. 7 | Mar. 14. | Mar. 21. | Mar. 28. | | |
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d | £ s. d. | £ s. d. | £ s. d. | £ s. d. | |
| A Depart. | | | | | | | | | | | | | | | |
| B „ | | | | | | | | | | | | | | | |
| C „ :— | | | | | | | | | | | | | | | |
| Joiners | | | | | | | | | | | | | | | |
| Smiths | | | | | | | | | | | | | | | |
| Fitters | | | | | | | | | | | | | | | |
| Contract— | | | | | | | | | | | | | | | |
| „ No. 3 | | | | | | | | | | | | | | | |
| „ No. 5 | | | | | | | | | | | | | | | |
| „ No. 6 | | | | | | | | | | | | | | | |
| Order No. 10 | | | | | | | | | | | | | | | |
| Repairs to Buildings | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

The wages chargeable to a department will represent the balance of miscellaneous work in that department after eliminating amounts relating to jobs and contracts for which separate accounts are kept. Where the apportioning of departmental charges is done on the basis of time instead of wages the ruling would have to be altered to meet the circumstances.

It will be observed that the weekly or quarterly total of wages relating to each department or contract may be posted in one sum, or it may be sub-divided to any extent that may be deemed desirable.

The wages summary is simply a memorandum on loose sheets for the purpose of arriving at the figures for the wages journal.

## III.—INDIRECT CHARGES.

Many of the items that go to make up the cost of an article cannot be charged to it directly in the same way as material and labour. Such items vary in number and description according to the nature of the business, and their distribution can only be effected by way of a percentage. It is always in the apportionment of the indirect charges that the greatest difficulty is encountered. Various questions present themselves. For example, what do those charges include? How is the percentage to be arrived at? Should all the charges be apportioned on the same basis, and, if not, how are they to be classified? These are points worthy of careful consideration, for after all the indirect charges form a considerable item in the total cost, and if they are not properly apportioned the benefit of the other costing work will be largely discounted.

**Classification of Indirect Charges.**

The expenditure usually coming under the head of Indirect Charges may be conveniently classified as follows:—

(A) *Departmental Charges:—*

(1) Rent, rates and taxes of factory.

(2) Depreciation and maintenance of plant, machinery and tools.
(3) Motive power, lighting and heating.
(4) Superintendence.
(5) Interest on capital invested in stores, plant, machinery and tools.
(6) Unproductive wages, including Timekeeper, Storekeeper, cleaning of factory, &c.

(B) *Expenses of Administration and Distribution:—*

(1) Salaries of Managers, Clerks and Directors (if any).
(2) Rent, rates and taxes of office and show-rooms and general office expenses.
(3) Discounts, allowances and bad debts.
(4) Travellers, advertising, &c.
(5) Interest on capital other than what is included in Class A.

The above classification is determined on the following grounds. Class A (Departmental Charges) includes items which can generally be apportioned to departments with accuracy, and it is only when we come to subdivide the general cost of a department over the work which is done in that department that it is necessary to have recourse to percentages. A more equitable distribution of the departmental or shop charges is thus obtained.

The items in Class B are not capable of apportionment in the same way and will be separately discussed.

## (A)—Departmental Charges.

**Method of Apportionment.**

As an example of Departmental Charges, take, for instance, plant and machinery. The depreciation on the whole of the plant and machinery in one department can readily be ascertained, but the rate of depreciation may vary in the different departments and the quantity of machinery used in one department may be much greater than in another. It would therefore be unfair to charge every contract over the whole works with an equal percentage by way of depreciation. The more correct method is to open in the financial books a Charges Account for each department, and having thus obtained the actual cost attributable to that department for charges coming under Class A, divide those charges proportionately over the work which the department turns out. For the first year an estimate of the percentage for this purpose must be adopted as there will be no reliable data to go upon, but afterwards the experience of the past should enable a very near approximation to be arrived at, allowing of course for any influences that might modify or increase the rate for the year under notice. For machine work it is sometimes advisable to fix an hourly rate for the use of each machine or class of machines, and to charge this rate against the jobs as representing depreciation and motive power. The object in costing should always be to (1) allocate to departments where possible, and (2) revert to percentages (*a*) for the purpose of sub-division, and (*b*) where departmentalising is impracticable.

**Fixing Machine Rates.**

**Agreement with Financial Books.**

In the case of cost accounts kept for individual jobs or contracts executed in any department, such contracts should be debited with the percentage of expenses appertaining to that department, and the departmental account representing the miscellaneous work of the department should be similarly debited with a like percentage, the corresponding credits being carried to the Charges account. This latter account should then agree at the end of the year with the actual expenses of that department, as shown by the financial books. Where the execution of an order necessitates its passing through several departments, an apportionment of the charges must be made and the items shown separately in the account in the Cost Ledger, so as to enable the respective charges accounts to be credited with their proper proportions. In cases where

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the work is of a general character, and there are no departments, as, for example, a purely contracting business, where the labour is not done on the premises, charges coming under Class A would have to be debited by way of a percentage based on the total expenses under that head.

**Individual Items Discussed.**

It will be advisable here to briefly discuss the items coming under the head of Departmental Charges and their apportionment over the departments:—

### (1) *Rent, Rates and Taxes of Factory.*

There should be little difficulty in arriving at a fair apportionment of these over the various departments. If the buildings should be freehold, then interest on the capital invested in them should be charged in lieu of rent.

### (2) *Depreciation of Plant, Machinery and Tools.*

This can be ascertained either by writing off a percentage year by year, or by valuing at each balancing date and writing off the balance against revenue. The former is the more usual method, but a detailed valuation at intervals of, say, four or five years, is very useful for the purpose of checking the sufficiency or otherwise of the rate of depreciation that is being adopted. Small tools having a short life should be kept in a separate account in the financial ledger, and the whole of the amount of each year's purchase debited to revenue, leaving a fixed balance to the debit of the account by way of capital outlay, and this balance should only be allowed to be added to where the actual value of tools has increased, as, for example, where the development of the business has necessitated the employment of additional men. The apportionment of the purchases of tools over the departments should present no difficulty, as they can be charged to the department for which they are wanted at the time they are acquired.

### (3) *Motive Power, Lighting and Heating.*

If the motive power for each department is separately generated, a dissection of the cost is simple, but where the whole of the power is derived through a central establishment, it is necessary to fix the proportion to be borne by each department.

The same remark applies to heating and lighting. The latter, however, can readily be apportioned by having a separate meter for each department.

### (4) *Superintendence, &c.*

The chief item under this head can be ascertained as a certainty in almost every case, as the charge represents the wages of foremen, each of whom has his own particular section of work to superintend.

### (5) *Interest on Capital invested in Plant, Machinery, &c.*

The impersonal accounts in the financial ledger will show the amount of the capital under this head, and its apportionment should be easily effected if the departments are kept distinct in the annual inventory.

### (6) *Unproductive Wages.*

The storekeeper's wages are usually distributed over the departments by way of a percentage on the materials consumed, and the wages of the timekeeper should be dissected according to the number of men employed in each department. The other expenses under this head must be apportioned according to circumstances; it is useless to endeavour to lay down a rule.

**Basis of Apportionment over work done.**

Assuming now that the amount of charges attributable to a particular department have been ascertained, the next question is on what basis should they be apportioned over the work done in that department. Will the expense vary according to the time spent upon each job or in proportion to the wages, or will the quantity or value of the material have any bearing upon the point? Each case must be dealt with on its own merits; but generally speaking, the quantity of material used has very little influence on the costs now under consideration. Where the raw material goes through a lengthened process of manufacture, the principal thing that affects rent, maintenance, depreciation, motive power and superintendence, is the amount of labour expended, and a point on which there is some difference of opinion is whether the expense should be distributed in proportion to the time spent or the wages paid. Much must depend on the class of workmen employed. Where the men are nearly all on an equality it will make but little difference in the result which method is adopted, but if there is a large number of apprentices or inferior hands, a little consideration will show that very diverse figures would be arrived at. Say, for example, that two men are put upon similar pieces of work. One is an expert workman and finishes in half the time required by the other, but receives double the rate of pay. In each case the same amount of wages is paid, but as regards tear and wear of tools, cost of superintendence and rent, etc., of premises occupied, the inferior hand has cost possibly more than double the expert workman, inasmuch as he has in all probability wasted more material and destroyed more tools even calculating hour for hour.

On the other hand the fact must not be lost sight of that in every factory there must be apprentices and inferior hands, and it may fairly be argued that it is unfair to charge a particular job with the larger proportion of charges, simply because one or more of those hands happen to have been placed upon the work. It seems more equitable to say that the proper cost of a job as regards departmental charges is the cost which would be incurred if an average workman in that particular department were deputed to perform the work. The distribution of the work amongst the various workmen may be but a mere incident in the management. The only case where this argument would not apply would be where certain classes of work could be equally well and expeditiously performed by inferior hands earning a lower rate of wages. For instance, by the use of a machine a boy in a given time might turn out as much work as a man could do although being paid only half the wages.

The conclusions to be deduced may therefore be stated briefly as follows:—

(1) Where the whole (or practically the whole) of the work done in a department is of such a character

that it is unimportant how it is distributed amongst the men, it is more correct to apportion the departmental charges according to wages paid.

(2) Where the work is of a varied character so that economy can be effected by allotting certain portions to hands earning a lower and other portions to hands earning a higher rate of wages, the more correct method is to apportion departmental charges according to time.

The wages basis is, of course, the simpler, and hence it is perhaps the more widely adopted, but each case should be considered on its merits in accordance with the foregoing rules.

## (B)—Expenses of Administration and Distribution.

**Basis of Apportionment.**

We now come to the expenses under Class B, expenses which cannot be apportioned directly to departments, and must therefore be treated as a general charge on the business, and divided by way of a percentage. Here again the question of how the percentage should be calculated has to be settled, and differences of opinion exist as in the former case, but looking at the items generally, there can be little doubt that they will vary according to turnover, where they vary at all.

Take, for example, managers' and office salaries, office expenses, interest on capital, discounts and allowances and bad debts. All of these are dependent chiefly upon the amount of business done, and it will matter but little whether the value of the goods is represented mainly by material or by wages. Capital outlay is indispensable in either case and the buying and selling and consequent office work must follow. More work and responsibility will fall on the managers and directors, and if the business is a prosperous one, their remuneration will tend to increase. Rent and taxes of offices and show-rooms would only fluctuate at long intervals, if at all, but any change that might take place would likewise depend upon the extension of business.

Now, if the turnover is the cause of increase or decrease, and that turnover consists of but three elements besides the one we are endeavouring to arrive at, namely, Labour, Material and Departmental Charges, it would clearly be unfair to use any one of these elements as a basis of calculation to the exclusion of the others, and hence the only safe method is to take the total of the three, which is known as Shop Cost.

Some writers contend that the time expended should be the gauge, but a great increase of business might very easily take place without much extra labour in the shape of manufacturing cost, and, on the other hand, there might be a large increase in material used without a corresponding increase in selling expenses. Much depends upon the nature of the business, but in most cases the variation in the shop cost of articles produced in a department, will fairly represent the fluctuation in the administrative expenses appertaining to it. There are a few items that may sometimes require special treatment, such as travelling expenses and advertising, as these may be a greater necessity for one line of goods than another.

The individual items included in expenses of Administration and Distribution call for little comment. As the description applied to them indicates, they are costs relating almost entirely to the selling, and would be incurred all the same if the goods were purchased as completed products instead of as raw materials for manufacture.

# IV.—THE COST AND STORES LEDGERS.

It has already been explained how the wages, material, and indirect charges are apportioned and find their way to the debit of the respective cost accounts. It now remains to be shown how the corresponding credit entries are arrived at, in order to make the cost system prove itself by double entry in the same way as the ordinary commercial books. The intermingling of the cost accounts with the financial accounts is sometimes recommended, but this should be avoided as it is really quite unnecessary and effects no saving of labour. The postings necessary to complete the double entry are very few, being for the most part periodical totals.

**Wages.**

Dealing first with wages, all that is necessary is to credit wages account with the total wages for the period as shown by the Wages Journal. This total should of course agree with the amount of wages spent as shown by the financial books, and thus prove that nothing has been omitted.

**Stores Ledger Accounts.**

Then with regard to material, the Stores Ledger Accounts have already been debited with the stores purchased, an account having been opened for each class of goods, while they have similarly been credited with the stores consumed, the departmental accounts having been charged with their due proportions. What has now to be done therefore is

(1) To credit the total stores purchased to a Purchases Account. The Delivery Notes having already been agreed daily with the invoices, this may be taken from the financial ledger.

(2) To see that the quantity of stores under each head in the Stores Ledger agrees with the quantity shown by the inventory.

(3) To carry down this quantity at cost price or under, according as it may be valued.

(4) To write off the balance on the cash column to an adjustment account. The amount written off, as before explained, will represent the loss or profit on the buying, the stores having been charged out at the buying prices current at the time of consumption.

**Indirect Charges.**

We now come to Departmental Charges. These have already been debited in their proper proportions to the respective departments and contracts. The next step will therefore be to open a Charges Account for each department, to which the credit entries should be passed. This can be accomplished in totals if the journalising of the transfer entries is done in a separate portion of the journal with a dissection column for each department. It should be carefully noticed that the charges in respect of distinct contracts or portions of contracts executed in any one department must be credited to the Charges Account of that department, so that the amount to the credit of the Charges Account at the end of the year may be compared with the amount actually paid, as disclosed by the financial books. The Distributive Charges being apportioned direct to Contracts can all be credited to one account.

**Proving the Accuracy of the Charges.**

It will thus be seen that the completing of the double entry has a twofold object. In the first place, it enables the Cost Ledgers to be properly balanced; and, in the second place, it summarises under "Wages" the total amount expended, and under "Charges" the amount relating to each department. These totals ought to agree with the corresponding debits in the financial ledger, for if they do not

## CHARGES ACCOUNT—DEPARTMENT A.

| Date. | Particulars. | Fol. | Amount. | Date. | Particulars. | Fol. | Departmental Charges. |
|---|---|---|---|---|---|---|---|
| | | | £ s. d. | | | | £ s. d. |
| | To Manufactured Goods Account . | | — — — | | By Sundries debited to the Department and to Contracts executed therein as per Journal . . . | | — — — |

there is something wrong in the charging out. As regards wages any such error must be purely clerical, but with indirect charges it may be that the percentage adopted is either too large or too small, and it must be amended for the succeeding year. The ruling of Charges Account on page 42 will show more clearly what is meant.

**Closing the Ledgers.**

We are now in a position to close the Cost Ledgers, which is done by opening a "Manufactured Goods Account," and transferring to the debit the total expenditure for the year on each of the departments and jobs, and to the credit (1) the amount of stores consumed as shown by the Purchases Account, and (2) the totals standing to the credit of Wages, Departmental Charges and Charges of Administration and Distribution. The only accounts then remaining open will be the balances of the Stores Ledger Accounts and a corresponding amount to the credit of Purchases representing the quantity unused.

**Work in Progress.**

Where there are uncompleted contracts the amount expended to date on each contract, including Departmental, but not Distributive, Charges, should be carried forward as a balance to the next period, and the total of the uncompleted contracts would then appear as a debit in the Manufactured Goods Account, which would be in the following form:—

## MANUFACTURED GOODS ACCOUNT.

| | | | £ s. d. | | | | £ s. d. |
|---|---|---|---|---|---|---|---|
| | To Department A ... | | | | By Stores Consumed ... | | |
| | ,, ,, B ... | | | | ,, Wages ... ... | | |
| | ,, ,, C ... | | | | ,, Departmental Charges | | |
| | ,, Contract 1 ... | | | | ,, Distributive, &c. Charges ... ... | | |
| | ,, ,, 3 ... | | | | | | |
| | ,, ,, 4 ... | | | | | | |
| | ,, ,, 7 ... | | | | | | |
| | ,, Stock Order 1 ... | | | | | | |
| | ,, ,, 2 ... | | | | | | |
| | ,, Stores Adjustment A/c | | | | | | |
| | ,, Uncompleted Contracts | | | | | | |

It will be observed that the above account shows on the one side the consumption of stores and expenditure in wages and charges, and on the other side the distribution of those items over the departments, jobs, and stock orders—that is, goods manufactured for stock.

**Cost Summary.**

All that now remains to be done is to compile the cost summary, for the purpose of comparing the cost price and the selling price. To facilitate this, every contract or job in the Cost Ledger should bear a reference folio to the Financial Ledger, where the personal account relating to same will be found. The necessary particulars can then be obtained with ease.

**Stock Orders, &c.**

Where manufactured goods go into stock, they should be treated as purchased from the department and passed through the Bought Journal in the ordinary way to the credit of the department at the price at which they could be bought in the market, thus showing the profit on manufacture. This price should be marked on the goods for reference purposes, but if used on a contract subsequently they should be debited against it at the buying price then ruling. If the Bought Journal is ruled with a column for each department and a general column for other purchases, manufactured goods so treated can readily be ascertained, and the department should not be charged with the percentage of distributive expenses in respect of them, as it has only got credit for the buying price. Miscellaneous items of manufactured goods which are sold direct from the departments will be passed through the Sold Journal and credited to the departments in a similar way, but of course at the selling price, and in this case the remark as to distributive expenses will not apply. References to these two departmental accounts in the Financial Ledger should be noted at the top of the corresponding cost account, and the departmental result can at once be arrived at for the purpose of entering up the cost summary.

**Advantages of Loose-leaf Ledger.**

For the purpose of the Cost Ledger nothing more convenient can be employed than the loose-leaf or perpetual ledger so largely used in Canada and the United States, and now to some extent in this country. The ledger is securely bound with an iron clasp and lock, of which the principal keeps the key. By unlocking the clasp old matter can be removed and filed in a binder and additional leaves can be inserted where required. It is thus easy to keep in consecutive order the whole of the matter relating to one job, and also to divide the job into sections if desired. All that is necessary is to start the various sections on succeeding sheets and add fresh leaves as required.

The following is a form of ruling of Cost Ledger Account:—

Personal Ledger Folio..............................

## COST LEDGER ACCOUNT.

*Job or Contract No.* ............................

| MATERIAL. | | | | | | | WAGES. | | | | INDIRECT CHARGES. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date. | Requisition or Credit Note No. | Particulars. | Quantity. | Rate. | Amount. | Credits. | Date. | Particulars. | Folio. | Amount. | Departmental Charges. | Distributive Charges. | TOTAL. |
| | | | | | £ s. d. | £ s. d. | | | | £ s. d. | £ s. d | £ s d. | £ s. d. |
| | | | | | | | | | | | | | |

# V.—GENERAL.

## Stocktaking.

The taking of stock is usually regarded as a long and tedious process in which the work of many weeks is crowded into a short period, but where proper Stores Accounts are kept this pressure can as a rule be greatly relieved. Needless to say stocktaking cannot be dispensed with altogether. It is necessary as a check upon the storekeeper and the accuracy of the book records; but there is no necessity for rushing the operation through with the consequent risk of errors. It is advisable that the inventory of the miscellaneous stores should be taken as near as possible to the balancing date, as there is more likelihood of errors in the books with regard to these; but there is no reason why the general stocktaking should not be extended over a period varying according to the magnitude of the business and finishing at the date of closing the accounts. The balance of each Stores Account in the Cost Ledger should be agreed with the inventory of the goods relating to it on the day the inventory is taken, and any difference

**Procedure.**

properly enquired into and adjusted. If this is done the Stores Ledger may then be relied upon to record the goods taken in and given out in the interval, and to show the quantity in hand when the balancing date arrives.

**Continuous check on Stores Ledger and Storekeeper.**

But beyond the annual stocktaking, it is advisable to adopt a continuous check on the Stores Ledger by selecting articles from time to time and asking the Storekeeper to count and forward a memorandum of the quantity in hand, and if thought desirable by way of a safeguard, the counting may be supervised by an independent person. It can then be seen whether the balance of the account in the Stores Ledger agrees with the quantity in the store-room. In this way the whole of the Stores may be gone through several times in the course of a year without any appreciable difference to the work of the staff. The accuracy of the Stores Ledger having thus been proved, the stores in hand at any given time can be ascertained from the books for the purpose, for example, of a half-yearly balance, without the necessity of going through the goods. The benefit of this procedure is two-fold. In the first place, it makes the Storekeeper much more careful, as he has no previous knowledge of what material he will next be required to verify, and in the second place, it assures the accuracy of the Stores

**Half-yearly Balancing.**

Accounts which might otherwise become unreliable.

**Stock Ledger should be kept.**

In the foregoing observations stores only have been referred to, but the same remarks apply equally to stock of manufactured goods, which should be recorded in a separate Stock Ledger in a similar manner. It may here be remarked that it is always advisable to keep stores of raw material and stock of completed articles entirely distinct, not only in the books but also in the buildings.

**Plant, Tools, etc.**

Where there are several departments, a separate account should bc kept of the plant, tools, &c. in each, so that the depreciation may be more accurately apportioned.

## Stores Orders.

**Stores Orders, how Regulated.**

In order to enable a business to be worked smoothly and effectively, it is necessary to have a proper system for regulating the quantity of stores on hand from time to time. At the top of each account in the Stores Ledger should be noted the maximum and minimum quantities of that particular class of material to be kept in the store, and it should be the duty of the Stores Ledger clerk to report to his principal immediately the maximum is exceeded or the minimum ceases to exist. In this way all danger of stores running short is obviated and consequent delay in the execution of orders avoided. There is nothing more aggravating than to find when a job is half finished that some necessary article is not in the storeroom and has to be specially ordered, all work being brought to a standstill in the meantime. Any such incident will necessarily result in a waste of time and temper and probably failure to deliver according to contract. When a contract is entered into it should at once be ascertained that the necessary materials are ordered to carry it out.

## Estimates.

**Estimates and results to be compared.**

Where work is done on contract the account in the Cost Ledger should bear a reference to the Estimate book or other source where particulars of the estimate will be found, so that same may be compared with the actual cost of execution, and any errors or miscalculation in the estimate noted.

Estimating is of course quite distinct from cost-keeping, but if the costing system is carried out on the lines here indicated the expenditure on the work, sectionally as well as in total, ought to very nearly agree with the estimate, unless there has been some sudden fluctuation in values or other influence to cause a discrepancy. In framing an estimate it is very useful for a manufacturer to be able to place his hand upon the actual cost of a similar piece of work. He has then only to allow for differences in cost of labour and material as between the two dates, and he can with confidence cut his profit fine should there be cause for doing so. If he cannot find in the books a precisely corresponding contract to guide him he can usually arrive at what he requires by adding together a number of parts of separate contracts.

# PART II.

Explaining the difference in the procedure set forth in Part I. in order to make same applicable to the following:—

**Undertakings where commodities undergo a continuous process of manufacture, and the cost per ton or other unit of each stage of that process is required.**

## MANUFACTURE BY PROCESS.

A class of manufacture which requires a somewhat different treatment is where articles or commodities are produced in large quantities by means of a continuous process, passing from stage to stage until finally the completed product is the result. Take, for example, cotton, woollen and linen factories, glass, iron, salt and chemical works, etc. Here the object to be aimed at is to ascertain the cost of each stage or section of the process. It is not enough to know the cost per ton, yard or other unit of the completed article or commodity, because the main object of costing in these cases is to show how the total cost is apportioned over the various sections or stages of the process. The advantage of knowing this is evident when the question of introducing labour-saving machinery is considered. There is but little advantage in reducing by a quarter or a half the cost of an operation which in itself represents only an infinitesimal proportion of the total cost, but if a similar saving can be effected in an operation which constitutes a large fraction of the total expenses it is a very different matter. If, therefore,

**Objects to be aimed at.**

the manufacturer has clearly before him the precise cost of each operation worked out at so much per article or per unit, he will see at once where it would be most beneficial to him to apply his ingenuity with the view of effecting an economy.

**Difference in procedure.**

In manufacture by process, wages and materials would in the first instance be ascertained in the manner already explained in Part I. The Difference would arise only in the manner of treatment in the Cost Ledger. An account would be opened for each stage or operation in the same way as was previously done for each department, and to this account should be debited all items of cost relating to that operation. The account would be ruled so as to show all desirable sub-divisions, as, for instance, materials, wages, fuel, water, lighting, depreciation, etc., so that at the end of a period it would show not only the total cost of such operation in manufacturing a certain quantity of goods, but the cost of the leading elements in same. The amount of sub-division would of course vary according to circumstances and requirements.

The quantity of goods produced should then be placed against the total cost of the section of process, and the cost per unit worked out: the Ledger would thus show at a glance the proportion of cost attributable to each stage of manufacture. If deemed desirable for the purpose of secrecy these quantities and costs per unit could be shown on a separate cost sheet instead of in the Cost Ledger. This precaution is sometimes necessary in order to prevent competitors in trade from obtaining information which it is not desired that they should possess, through the medium of the office staff.

**Indirect Charges.**

In this class of manufacture it is usually much easier to apportion with accuracy the indirect charges such as depreciation, lighting and heating, as in a business of any magnitude a separate building or block of buildings would as a rule be allocated to each stage of manufacture.

A specimen form of ruling of Cost Ledger is given on page 58. It is possible to ascertain the quantity of goods produced by keeping a record of quantities as well as prices in the Sales Day Books, and then making allowance for stock on hand at the beginning and end of the period, but it is safer to record the quantities as the goods leave the factory, as by the other method there is a danger of leakage on which there is no proper check.

## COST LEDGER ACCOUNT.

……………………………………………Process.

| MATERIAL. | | | | | | | WAGES. | | | | INDIRECT CHARGES. | | Total. | Quantity produced and Rate per Unit. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date. | Requisition or Credit Note No. | Particulars. | Quantity. | Rate. | Amount. | Credits. | Date. | Particulars. | Folio. | Amount. | Particulars. | Amount. | | |
| | | | | | £ s. d. | £ s. d | | | | £ s. d. | Lighting ...<br>Heating ...<br>Motive Power<br>Depreciation, &c., &c. | £ s. d. | £ s. d. | |

# PART III.

Explaining the difference in the procedure set forth in Part I. in order to make same applicable to the following:—

**Undertakings where small articles of a miscellaneous character are manufactured, passing through one or more departments, and it is required to ascertain, prove and confirm the cost of the individual items or groups of items.**

# MANUFACTURE OF MISCELLANEOUS SMALL ARTICLES.

In addition to the classes of manufacture discussed in previous chapters, there are others where small articles of a miscellaneous character are produced. The turnover may be large or it may be small; in either case a somewhat different system of costing must be adopted. The difficulty is that although the value of the individual articles may be very small, the items of which they are composed may be many, and consequently the clerical labour entailed in keeping an absolutely correct record of the cost is just as heavy, article for article, as in the case of more valuable products, and is therefore excessive in relation to the monetary value of the output. Where goods are turned out in large quantities, it is sometimes possible to classify the work, and so arrive at the cost of say 100 or 1,000 articles of the same sort, instead of trying to follow individual items. This system will be found to work smoothly where articles of a particular class are wholly constructed in one department, even although that department may perform

**Costing by classification.**

other work as well, but where in the course of manufacture articles pass through a number of departments, and each department operates on a number of different products, the costing becomes a little more intricate, but should nevertheless be carried out as far as possible.

**Excessive Clerical Labour to be avoided.**

There are other cases, however, where very little classification can be effected. Take for example the works of an electrical engineer. Here it will be found that comparatively few of the items are precisely alike; they may be very nearly so, but there is some little difference which prevents them being grouped together. Add to this the fact that many of the articles are made up of hundreds of parts, and when completed are worth only a few shillings, and it will at once be seen how difficult it is to get out the accurate cost without an excessive amount of clerical labour. In a factory of this description it is practically impossible to return to the storeroom at the conclusion of each operation all the diminutive nuts and screws and bolts and nails remaining over, so as to show exactly what quantities have been used, and, as it frequently happens that the same workman may be engaged upon half a dozen different pieces of work in the course of a day, it must be evident that strict accuracy cannot be attained at reasonable cost.

**Sectional results.**

A better plan where the operations are of this mixed character is to divide the factory into as many sections and sub-sections as possible and ascertain the result of each. The sections should be arranged on the following basis: Each section should represent a certain class of articles which undergo a similar course of treatment, and which may comprise a portion of the work in several departments. The object to be aimed at is to include in the section the complete manufacture from beginning to end of a portion of the output of the factory, and to exclude everything else. The section can then be treated in precisely the same manner as a single order, the cost account being debited with the material supplied and labour expended upon it, plus departmental charges, and credited with the estimated cost of the manufactured articles produced. This cost, which forms the basis for fixing the selling price, is arrived at in the following way:—

(1) Where the item is one that is frequently manufactured, even if its value is small, it will be worth while to keep a correct record in a few instances from time to time in order to ascertain the average cost, which should then be recorded in a register for reference.

(2) The cost of occasional items of considerable value should be tested periodically and the result similarly registered.

(3) The cost of small items which are seldom produced may without much risk be estimated.

At the end of the year, it will then be seen by the sectional accounts whether the cost estimates have been accurate, as if so, the debit and credit sides will agree. Of course the less estimating that is done so much the better; but the fact must not be lost sight of that there is a limit to the amount of time and trouble to be devoted to costing. There is a point where it ceases to pay, and discretion must be exercised. We frequently find writers on this subject insisting on absolute accuracy as being the only result which is of any practical value; but a little careful consideration will show that in a factory of the class here referred to such an achievement, although easy in theory, is impossible in practice, on account of the prohibitive cost. What is really workable and useful is a system, such as is above described, that will prove the accuracy of the estimates without entailing an excessive amount of clerical labour.

**Necessity of discretion in Methods.**

Where any of the articles manufactured are of sufficient individual value to render it worth while to keep a separate cost account for them this should always be done, and the system of costing by sections applied only where the other course is impracticable, that is, to the miscellaneous products.

**Distributive Charges.**

It will be observed that in the sectional accounts shop cost only is taken into consideration, so that in fixing the selling price there will have to be added the expenses of distribution as well as the profit.

# PART IV.

Giving a short description of the Card System, explaining the advantages of Cards, and indicating where their partial use may be effective and economical.

## THE CARD SYSTEM.

In this country the system of keeping records by means of cards instead of books is not in use to any great extent, but in America it is largely employed and is very popular. Where there is a large amount of detail the card system has many advantages as compared with books, and very few disadvantages. Almost the only serious drawback is the danger of cards getting mislaid or lost, and this should not be difficult to guard against if reasonable precautions are taken. The procedure is briefly as follows: Each item of material, labour, or other expense is recorded on a card, and the sum of the cards relating to any given product represents the total cost of that product. The method of using the cards in order to arrive at the desired result is not always the same, each authority having his own system, but, generally speaking, one of the two following courses is adopted, with perhaps a little variation.

**First Method.**

(1) A production order is issued for each article or commodity to be manufactured, and this is reduced to its lowest terms, that is, it

is subdivided into as many units or parts as possible. Each of these units is specified on the production order and a card issued for it; this card is handed to the department which is to execute that section of the order, and should the work extend to more than one department the card will always follow and have recorded upon it the expenditure incurred. Sometimes the wages are dissected by a separate process and material only treated in this way. A register is kept to show the progress or transfer of the cards from one department to another, and to record the return of the cards as each section of the work is completed. If the wages have not already been included, each card is then debited with its proper proportion (which is ascertained from the wages analysis), the indirect charges are added, and each unit of the order is complete in itself. The cards thus completed are entered upon the production order, and the total cost ascertained.

Where it is only desired to ascertain the cost of the order as a whole, and not of the component parts, the wages need not be entered up on the cards, but debited in one amount to the production order. It is usually an advantage, however, to know the cost of specific parts, and it will be seen that having first of all reduced the product to its lowest terms of sub-division, the summary on the production order can be so classified and arranged as to show the cost of the larger as well as the smaller sections. For instance, half-a-dozen units may go to make up a particular part, the cost of which it is desired to ascertain and record for future reference. All that is necessary then is to group together on the production order the six cards representing those units and carry out the total.

It is convenient to have the production order in the form of a portfolio, so that the cards relating to it can be enclosed, and the complete record filed away in one packet. The whole of the detail relating to each order is thus attached to it, and can be referred to at any time without the necessity of wading through a mass of papers appertaining to other matters.

**Drawbacks of this Method.**

Where this plan is adopted, a means must be devised of preventing the cards getting soiled and illegible in passing from hand to hand, and a difficulty also arises in keeping a proper account of the stores consumed without duplication of work. It will be evident that the cards used for the costing could not readily be utilised for debiting the stores accounts, as there would be several classes of stores on one card, and the cards would not, therefore, be capable of assortment under the heads of the various accounts. Separate stores requisition cards would, therefore, be required. The time of the foremen would also be too much occupied with clerical work unless each had a clerk to assist him, and, taken altogether, this method of using cards is best adapted for a small concern.

**Second Method.** (2) The other method is to assign a number to each order or section of an order, the cost of which it is desired to ascertain separately. All materials used and all time expended on that order, or sectional order, must then be recorded on cards bearing a corresponding number. The time cards and the stores cards, when handed in at the end of the day, are sorted according to their numbers, and the totals of the stores cards and wages cards respectively bearing a like number are entered to the debit of the order to which they relate. To carry out this system, it is of course necessary for a workman to use a separate card for each piece of work on which he has been engaged—that is to say, he must not enter two order numbers on the same card, otherwise it would be impossible to sort the cards for the purpose of gathering together all those relating to the same piece of work. Sometimes perforated cards are used, so as to cover, say, five or six jobs.

The indirect charges are dealt with in the same manner as under the first method, and the records similarly filed. It will be observed that, in this case, the cards used for requisitioning stores can be made to serve two purposes. They can first be classified under the headings of the Stores Accounts for the purpose of charging out, and after being entered up in the Stores Ledger they will be available for re-assortment under the order numbers.

**Advantages of Cards.**

The following are some of the advantages of the Card System :—

It can be introduced partially where found to be expedient and desirable, books being used for the other records. It is also elastic, and will adapt itself to any conceivable increase or development of work, while dead or useless records can always be eliminated with ease. Again, the entering of each individual item on a separate card, facilitates classification or grouping, first in one order for one purpose, and afterwards in another order for another purpose. This is of course impossible with book entries, the only means of effecting such a result being by re-copying. The whole of the records relating to each job or contract can be collected and filed away in one packet for future reference, so that details as well as totals can be readily looked up.

On the whole it will usually be found that a partial adoption of cards will give the best results, but much depends upon circumstances, and therefore judgment, insight, and discrimination must always play a large part in settling the most effective, useful, and economical system to employ.

**Where most Effective.**

From the above it will be gathered that cards are most useful where items are numerous and have to be classified and reclassified for posting to different accounts; as, for example, in the case of Stores issued, which have to be posted to the Stores Accounts and also to the jobs or contracts. Cards are also useful in the workshop, where the men's daily time is broken up over a number of jobs. In such a case they greatly facilitate the dissection of the wages.

## CONCLUSION.

Having now briefly outlined the Costing System, a few concluding remarks on the relation which it bears to the financial accounts will not be out of place—in fact, to obtain the best possible results, the two systems should be made to blend into and prove each other. The financial accounts will show the gross and net profits of the business as a whole, and they should also be framed so as to show the amount of expenditure on each department in respect of Departmental Charges, and the total Costs of Administration and Distribution, so that these figures may be compared at the end of the year with the amounts debited in the Cost Ledger in detail and credited in totals to the Charges Accounts. The Cost Accounts on the other hand will show how the gross and net profits are made up and how the departmental expenditure is distributed over the jobs and contracts. Thus the exact result of the operations in each department will be brought to light and the effect of this upon the workmen generally, and upon the foremen in particular, can hardly be

**The Financial Accounts.**

**Effect of check upon Employes.**

over-estimated. There is in the first place the incentive of competition, the head of each department endeavouring to emulate his colleagues, and then there is the moral effect upon the workmen who will be far more careful to avoid waste and misuse, if they know that a proper check is being kept on all the material that passes through their hands. Time and goods both represent money, and waste of either is the loss of so much in pounds, shillings and pence. All reasonable precautions should therefore be taken, and the small outlay on clerical work thus occasioned will be found to repay itself many times over.

# APPENDIX OF FORMS.

## For the purpose of illustrating the text of the book generally.

Note.—It will be observed that certain of the entries can be traced through the forms, the same as in actual practice. The remaining items are introduced to illustrate the working of the particular form in which they appear.

## ORDER BOOK.

| Date. | Order No. | Customer's Reference No. | NAME AND ADDRESS. | PARTICULARS. | Estm. Book Folio. | Cost Ledger Folio. | Day Book Folio. | Date of Completion. |
|---|---|---|---|---|---|---|---|---|
| 1903. | | | | | | | | |
| Jan. 10 | 50 | 237 | J. T. & Co.,<br>15, Victoria Street, W. | Electric Lighting installation at Priory Mansions including dynamo, accumulators, wiring and fittings complete for £420, as per estimate | 5 | 90 | 17 | 26/4/03 |

## STORES REQUIRED FORM.

*January* 11*th*, 1903.

The following Stores are required for Contract No. 50.

| Quantity. | Description. | If not in Stock how to be ordered. | Date ordered. |
|---|---|---|---|
| 110-yds. | 7/18 Class D. Cable | In Stock | |
| ½-mile | 7/22 „ „ | „ | |
| 1-mile | 3/22 „ „ | „ | |
| 6 | Fuse Cases, No. 201 | Order from G.E. Co. | Jan. 12 |
| 1 | Dynamo, 1500, 30 amp. | Special Order | „ 13 |
| 1 | Switchboard to Drawing No. 37/104 | Works Order | „ 12 |
| 1,000-ft. | ⅝-in. Simplex Tubing, brazed | In Stock | |
| 500-ft. | ½-in. Simplex Tubing, brazed | „ | |
| 4-doz. | ⅝-in. Bends | „ | |
| 4-doz. | ⅝-in. Elbows | „ | |
| 12 | Ceiling Roses, &c., &c. | „ | |

..................................................................................... *Foreman.*

This Order is filled in by the Foreman in charge from the Specifications, &c., and should constitute a complete list of all the more important items required for the Job. It is first sent to the Stores Ledger Clerk who indicates items which are in Stock. The Manager then completes the third column by directing how the other items are to be obtained. (*Page* 51.)

## STORES—LEDGER CLERK'S REPORT FORM.

*20th January,* 1903.

The quantity in hand of the undermentioned Stores is below the minimum and a further supply is required:—

……………………………………………………

*Stores Ledger Clerk.*

| Description. | Quantity in hand. | Quantity ordered last time. | Date supplied. | From whom ordered. | Directions. | Manager's Initials. | Date ordered. |
|---|---|---|---|---|---|---|---|
| $\frac{7}{20}$ Class D Cable | 1,750 yds. | 4 miles | 8/10/02 | G. D. & Co. | As before | J.B. | 21/1/03 |
| $\frac{5}{8}$ in. Simplex Tube (brazed) … … | 1,500 feet | 8,000 feet | 20/11/02 | R. S. & Co. | Order 10,000 feet | J.B. | 21/1/03 |

From the above directions are prepared the orders for Stores in the usual way. (*Page* 50.)

## STORES DELIVERY NOTE.

*No.* 1,560.

STORES RECEIVED INTO STOREROOM.

The following articles have been received in good condition from C. D. & Co.:—

*Date*, 25*th January*, 1903.

| Description. | Quantity. | Rate. | Amount. | | |
|---|---|---|---|---|---|
| | | | £ | s. | d. |
| $\frac{7}{20}$ Cable, Class D ... ... | 4 miles. | £33 | 132 | 0 | 0 |
| $\frac{8}{22}$ ,, ,, ... ... | 10 ,, | £17 | 170 | 0 | 0 |

.............................................*Storekeeper.*

This is made out as regards columns 1 and 2 by the Storekeeper on taking delivery, and he keeps a carbon copy in his book. The prices are filled in by the Counting House staff, and the quantities checked with the invoice. (*Pages* 15, 16 & 17.)

## STORES DELIVERY NOTE (No. 2).

### STORES DELIVERED DIRECT TO DEPARTMENT OR JOB.

*No.* 40. *Job or Department No.* 50.

The following articles have been received in good condition from F. G. & Co.:—

*Date, February* 10*th*, 1903.

| Description. | Quantity. | Rate. | Amount. |
|---|---|---|---|
| | | | £ s. d. |
| Fuse Cases (No. 201) ... | 6 | 45*s*. | 13 10 0 |

..................................................*Foreman.*

This is printed on coloured paper and issued by the Works Clerk, who keeps a carbon copy in his book. (*Page* 15.)

## STORES REQUISITION NOTE.

JOB OR DEPARTMENT REQUISITION ON STORES.

*No.* 1200. *Job or Department No.* 50.

Please deliver to bearer the following Stores:—

*Date*, 11*th February*, 1903.

| Description. | Quantity. | Rate. | Amount. |
|---|---|---|---|
| | | | £ s. d. |
| $\frac{5}{8}$ in. Bends ... ... ... | 3 doz. | 5*s*. | 0 15 0 |

A.B., *Foreman.*

*Received*, C.D., *Workman.*

This is made out, except prices, by the Storekeeper at the request of the workman, and a carbon copy is kept. The prices are filled in by the Counting House staff. (*Pages* 15, 16 & 17.)

## STORES RETURNED NOTE.

*No.* 175. *Job or Department No.* 50.

Received back into Storeroom the following unused Stores:—

*Date, April* 26*th*, 1903.

| Description. | Quantity. | Rate. | Amount. |
|---|---|---|---|
| | | | £ s. d. |
| $\frac{3}{32}$ Cable, Class D ... ... | 110 yards | £16 per mile | 1 0 0 |

.................................................................... *Storekeeper.*

This form is printed in red ink and issued by the Storekeeper, who keeps a carbon copy. The prices are filled in by the Counting House Staff. (*Page* 16.)

## STORES LEDGER

Minimum Quantity—Size $\frac{3}{22}$ — $1\frac{1}{4}$ miles.
,, $\frac{7}{18}$ — $1\frac{1}{2}$ ,,
,, $\frac{7}{20}$ — 1 ,,

CLASS OF GOODS

### INWARDS.

| Date. | Delivery or Return Note No. | From whom received. | Quantity. Size $\frac{3}{22}$ Miles | Size $\frac{3}{22}$ Yds. | Size $\frac{7}{18}$ Miles | Size $\frac{7}{18}$ Yds. | Size $\frac{7}{20}$ Miles | Size $\frac{7}{20}$ Yds. | Rate per Mile. £ | Amount. £ | s. | d. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1903. | | | | | | | | | | | | |
| Jan. 25 | 1560 | C. D. & Co. | 10 | — | | | | | 17 | 170 | 0 | 0 |
| ,, 25 | 1560 | ,, | | | | | 4 | | 33 | 132 | 0 | 0 |
| Apl. 26 | 175 | Return | | 110 | | | | | 16 | 1 | 0 | 0 |
| ,, 27 | 1590 | R. F. & Co. | | | 2 | — | | | 48 | 96 | 0 | 0 |
| | | | 10 | 110 | 2 | — | 4 | — | | 399 | 0 | 0 |
| | | Balances brought down | 9 | 110 | 1 | 1540 | 3 | 1650 | | 357 | 15 | 0 |

The Quantity Columns are balanced and the Stores in hand valued at Cost
sents depreciation or appreciation as the case may be. The rulings of the Stores
Leaf Ledger a number of different rulings can readily be used in the same

ACCOUNT.

—CABLE (CLASS D).

Maximum Quantity—Size $\frac{3}{22}$ — 12 miles.
,, $\frac{7}{18}$ — 6 ,,
,, $\frac{7}{20}$ — 5 ,,

OUTWARDS.

| Date. | Requisition Note No. | Particulars. | Quantity. | | | | | | Rate per Mile. | Amount. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Size $\frac{3}{22}$ | | Size $\frac{7}{18}$ | | Size $\frac{7}{20}$ | | | | | |
| | | | Miles | Yds. | Miles | Yds. | Miles | Yds. | £ | £ | s. | d. |
| 1903. | | | | | | | | | | | | |
| Mar. 20 | 1325 | Contract No. 60 | 1 | | | | | | 16 | 16 | 0 | 0 |
| ,, 20 | 1326 | ,, ,, 60 | | | | | | 110 | 32 | 2 | 0 | 0 |
| ,, 22 | 1516 | ,, ,, 50 | | | | 220 | | | 44 | 5 | 10 | 0 |
| June 30 | | Balance c/d. | 9 | 110 | | | | | 16 | 145 | 0 | 0 |
| ,, 30 | | ,, ,, | | | 1 | 1540 | | | 46 | 86 | 15 | 0 |
| ,, 30 | | ,, ,, | | | | | 3 | 1650 | 32 | 126 | 0 | 0 |
| ,, 30 | Fol. 95 | Depreciation carried to Adjustment A/c. | | | | | | | | 17 | 15 | 0 |
| | | | 10 | 110 | 2 | — | 4 | — | | 399 | 0 | 0 |

Price or Market Value if lower. The balance of the Cash Columns then repre-
Ledger will vary according to the nature of the Articles. By adopting a Loose
book. The same remark applies to Card Ledgers. (*Pages* 16, 17, 40 & 43.)

## WORKMAN'S TIME CARD.

| | | | | |
|---|---|---|---|---|
| Workman's No. **10**<br>Rate 1/-. | No. **10.** | No. **10.** | No. **10.** | No. **10.** |
| Job No. 50. | Job No. 25. | Job No. 70. | Job No. | Job No. |
| Work Machining | Work Finishing | Work Assembling | Work | Work |
| Hours 3 | Hours 2½ | Hours 4½ | Hours | Hours |
| Amount 3/- | Amount 2/6 | Amount 4/6 | Amount | Amount |
| Total 10 hrs. @ 1/- = 10/- | | | | |

This is first agreed with the workman's time record and then split up for dissection purposes. Perforated cards are used only where a workman is employed on more than one piece of work in the course of a day. (*Page* 24.)

## WAGES JOURNAL.

| Department or Contract. | Week Ending<br>Jan. 3 | Jan. 10. | Jan. 17. | Jan. 24. | Jan. 31. | Feb. 7. | Feb. 14 | Feb. 21. | Feb. 28. | Mar. 7. | Mar. 14. | Mar. 21 | Mar. 28 | Total. | Cost Ledger Folio. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | £ s.d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | |
| A Department | .. | .. | 51 0 0 | 37 0 0 | 56 0 0 | 33 0 0 | 90 0 0 | 160 0 0 | 240 0 0 | 44 0 0 | 30 0 0 | .. | .. | 741 0 0 | 18 |
| B ,, | .. | 160 0 0 | 150 0 0 | 210 0 0 | 40 0 0 | .. | .. | .. | .. | .. | .. | .. | .. | 560 0 0 | 25 |
| C ,, : | | | | | | | | | | | | | | | |
| Joiners .. | .. | .. | .. | .. | .. | 27 5 0 | 30 0 0 | 35 0 0 | 8 0 0 | .. | .. | .. | .. | 100 5 0 | 32 |
| Smiths .. | .. | .. | 62 0 0 | 38 0 0 | 22 0 0 | .. | 28 0 0 | .. | .. | .. | .. | .. | .. | 150 0 0 | ,, |
| Fitters .. | .. | .. | .. | .. | .. | .. | .. | 10 0 0 | .. | 16 0 0 | 35 0 0 | 22 0 0 | 17 0 0 | 100 0 0 | ,, |
| Contract No. 50: | | | | | | | | | | | | | | | |
| Dept. A .. | .. | .. | .. | 1 15 0 | .. | 2 10 0 | 2 5 0 | 1 10 0 | 3 0 0 | 1 10 0 | 1 10 0 | 1 0 0 | .. | 15 0 0 | 90 |
| ,, B .. | .. | .. | .. | .. | 2 0 0 | 1 10 6 | 3 5 0 | 1 15 0 | 2 9 6 | 1 15 0 | .. | .. | .. | 14 0 0 | ,, |
| Outdoor .. | .. | .. | .. | 15 0 0 | 27 10 0 | 16 0 0 | 15 0 0 | 32 10 0 | 24 10 0 | .. | 19 10 0 | 1 5 0 | .. | 150 0 0 | ,, |
| &c. | | | | | | | | | | | | | | | |
| | .. | 160 0 0 | 263 0 0 | 301 15 0 | 147 10 0 | 80 5 6 | 168 10 0 | 240 15 0 | 277 19 6 | 63 5 0 | 86 0 0 | 24 5 0 | 17 0 0 | 1830 5 0 | 92 |

(*Pages* 24 & 26.)

*Estimate Book Folio* 5. COST LEDGER ACCOUNT. *Personal Ledger Folio* 109.

CONTRACT NO. 50.—PRIORY MANSIONS.

| MATERIAL. | | | | | | | WAGES. | | | | Indirect Charges. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date. | Requisition or Credit Note No. | Particulars. | Quantity. | Rate. | Amount. | Credits. | Date. | Particulars. | Folio. | Amount. | Departmental Charges. | Distributive Charges. | Total. |
| 1903. | | | | | £ s. d. | £ s. d. | 1903. | | J | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| Jan. 21 | 1131 | $\frac{3}{22}$ D. Cable .. | ½ mile | £14 | 7 0 0 | | Mr. 28 | Dept. A .. | 6 | 15 0 0 | | | |
| ,, | 1132 | $\frac{7}{22}$ ,, .. | ½ ,, | £22 | 11 0 0 | | ,, | ,, B .. | 6 | 14 0 0 | | | |
| Feb. 10 | d40 | FuseCases, No. 201 | 6 | 45/- | 13 10 0 | | ,, | Outdoor .. | 6 | 150 0 0 | | | |
| ,, | d50 | Dynamo—<br>1500, 30 amps. | 1 | | 35 12 6 | | | | | | | | |
| 11 | 1191 | ⅝in. Simp. Tubing | 800 ft. | 60/- | 2 8 0 | | | Dpt. A, 30% on wages.. | 9 | | 4 10 0 | | |
| ,, | 1192 | ½in. ,, .. | 500 ft. | 50/- | 1 5 0 | | | | | | | | |
| ,, | 1200 | ⅝in. Bends .. | 3 doz. | 5/- | 0 15 0 | | | Dpt. B, 25% on wages.. | ,, | | 3 10 0 | | |
| Mar. 22 | 1516 | $\frac{7}{18}$ D. Cable ..<br>&c., &c. | 220 yds. | £44 | 5 10 0 | | | Outdoor. 20% on wages.. | ,, | | 30 0 0 | | |
| Apl. 26 | 175 | $\frac{3}{21}$ D. Cable .. | 110 yds. | £16(?) | | 1 0 0 | | 10% on shop cost .. | 9 | | | 29 6 0 | |
| | | | | | 77 0 6 | | | | | | | | |
| | | Less Credits .. | | | 1 0 0 | | | | | | | | |
| | | | | | 76 0 6 | | | | | 179 0 0 | 38 0 0 | 29 6 0 | 322 6 6 |
| | | | | | | | | By Manufd. Goods a/c | 96 | | | | 322 6 6 |

Credits for materials returned should be entered in red ink. The Wages items are the quarterly totals of the Wages Journal relating to this Contract. In the case of uncompleted Contracts no transfer entry to Manufactured Goods Account is passed at balancing. Extra columns for analysing the material are frequently introduced. (*Pages* 16, 24 & 43.)

## PURCHASES ACCOUNT.

| 1903. | | | £ | s. | d. | 1903. | | | £ | s. | d. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| June 30 | To Manufactured Goods a/c—Stores consumed | 96 | 7,500 | 10 | 6 | June 30 | By Stores Purchased less returns as per Financial Ledger .. .. .. | 80 | 9,050 | 15 | 0 |
| | ,, Stores on hand .. | c/d | 1,550 | 4 | 6 | | | | | | |
| | | | 9,050 | 15 | 0 | | | | 9,050 | 15 | 0 |
| | | | | | | | By Stores on hand .. | b/d | 1,550 | 4 | 6 |

The Stores consumed will represent the total Stores issued plus or minus the balance of the Stores Adjustment Account. (*Pages* 40 & 43.)

## WAGES ACCOUNT.

| | | | £ | s. | d. | | | | £ | s. | d. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1903.<br>June 30 | To Manufactured Goods a/c .. .. .. | 96 | 6,700 | 5 | 0 | 1902.<br>Sept. 30 | By Cash as per Wages Journal | 35 | 1,700 | 5 | 0 |
| | | | | | | Dec. 31 | ,, ,, ,, | 40 | 1,650 | 10 | 0 |
| | | | | | | Mar. 31 | ,, ,, ,, | 89 | 1,830 | 5 | 0 |
| | | | | | | June 30 | ,, ,, ,, | 150 | 1,519 | 5 | 0 |
| | | | £6,700 | 5 | 0 | | | | £6,700 | 5 | 0 |

(*Pages* 39 & 43.)

*Financial Ledger Folio* 105.

## CHARGES ACCOUNT—DEPARTMENT A.

| Date. | Particulars. | Fol. | Amount. | | | Date. | Particulars. | Fol. | Departmental Charges. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1903. | | | £ | s. | d. | 1903. | | J | £ | s. | d. |
| June 30 | To Manufactured Goods a/c: | 96 | 309 | 0 | 0 | June 30 | By Debits to Dept. .. | 15 | 205 | 10 | 0 |
| | | | | | | | ,, Contract No. 10 .. | 11 | 40 | 10 | 0 |
| | | | | | | | ,, ,, 15 .. | 13 | 58 | 10 | 0 |
| | | | | | | | ,, ,, 50 .. | 9 | 4 | 10 | 0 |
| | | | 309 | 0 | 0 | | | | 309 | 0 | 0 |

The Contracts referred to above were carried out wholly or partially in this Department. The credit entries can be passed in totals as explained on page 41. (*Pages* 41 & 43.)

*Financial Ledger Folio* 165.

## DISTRIBUTIVE CHARGES ACCOUNT.

| | | | £ | s. | d. | | | J | £ | s. | d. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1903.<br>June 30 | To Manufactured Goods A/c. | 96 | 766 | 2 | 6 | 1903.<br>June 30 | By Debits to Dept. A. .. | 9 | 56 | 2 | 6 |
| | | | | | | | ,, ,, ,, B. .. | ,, | 240 | 0 | 0 |
| | | | | | | | ,, ,, ,, C. .. | ,, | 120 | 0 | 0 |
| | | | | | | | ,, Outdoor .. .. | ,, | 250 | 0 | 0 |
| | | | | | | | ,, Debits to Contract No. 10 | ,, | 25 | 0 | 0 |
| | | | | | | | ,, ,, Contract No. 50 | ,, | 29 | 6 | 0 |
| | | | | | | | ,, ,, Contract No. 60 | ,, | 45 | 14 | 0 |
| | | | £766 | 2 | 6 | | | | £766 | 2 | 6 |

(*Pages* 41 & 43.)

## STORES ADJUSTMENT ACCOUNT.

| | | | £ | s. | d. | | | | £ | s. | d. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1900. | | | | | | 1903. | | | | | |
| June 30 | To DEPRECIATION :— | | | | | June 30 | BY APPRECIATION :— | | | | |
| | Cable—Class D. .. | 87 | 17 | 15 | 0 | | Conduit .. .. | 65 | 12 | 10 | 0 |
| | Screws .. .. | 72 | 45 | 10 | 0 | | Brass .. .. | 67 | 7 | 2 | 6 |
| | Copper .. .. | 75 | 37 | 5 | 0 | | | | | | |
| | Ceiling Roses .. | 77 | 9 | 15 | 0 | | | | | | |
| | Nails .. .. | 78 | 4 | 7 | 6 | | ,, Balance carried to Manufactured Goods A/c .. . .. | 95 | 95 | 0 | 0 |
| | | | 114 | 12 | 6 | | | | 114 | 12 | 6 |

(*Pages* 20 & 40.)

## MANUFACTURED GOODS ACCOUNT.

| 1903. | | | £ | s. | d. | 1903. | | | £ | s. | d. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| June 30 | To Department A. .. | 18 | 2,509 | 15 | 6 | June 30 | By Stores Consumed per Purchases A/c .. | 91 | 7,500 | 10 | 6 |
| | ,, ,, B. .. | 25 | 4,210 | 5 | 0 | | ,, Wages .. .. .. | 7 | 6,700 | 5 | 0 |
| | ,, ,, C. .. | 32 | 3,750 | 2 | 6 | | ,, Departmental Charges: | | | | |
| | ,, Contract No. 20 .. | 17 | 860 | 0 | 0 | | Department A. .. | 93 | 309 | 0 | 0 |
| | ,, ,, ,, 35 .. | 14 | 1,228 | 6 | 0 | | ,, B. .. | 21 | 560 | 10 | 0 |
| | ,, ,, ,, 29 .. | 37 | 1,800 | 0 | 0 | | ,, C. .. | 27 | 455 | 7 | 6 |
| | ,, ,, ,, 50 .. | 90 | 322 | 6 | 6 | | Outdoor .. .. | 30 | 965 | 0 | 0 |
| | ,, Stock Order 10 .. | 50 | 550 | 10 | 0 | | ,, Distributive Charges.. | 94 | 766 | 2 | 6 |
| | ,, ,, ,, 15 .. | 53 | 420 | 0 | 0 | | | | | | |
| | ,, Stores Adjustment A/c: Depreciation | 95 | 95 | 0 | 0 | | | | | | |
| | ,, Work in Progress .. | c/d | 1,510 | 10 | 0 | | | | | | |
| | | | 17,256 | 15 | 6 | | | | 17,256 | 15 | 6 |
| | | | | | | | By Work in Progress .. | b/d | 1,510 | 10 | 0 |

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## BALANCE ACCOUNT.

| 1903. | | Fol. | £ | s. | d. | 1903. | | Fol. | £ | s. | d. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| June 30 | Stores a/cs— | | | | | June 30 | Purchases a/c— | | | | |
| | Cable—Class D.. | 86 | 357 | 15 | 0 | | Stores on hand .. | 91 | 1,550 | 4 | 6 |
| | Brass .. .. | 17 | 320 | 10 | 0 | | Manufactd. Goods a/c— | | | | |
| | Copper .. .. | 25 | 575 | 15 | 0 | | Work in Progress.. | 96 | 1,510 | 10 | 0 |
| | Screws .. .. | 27 | 125 | 4 | 6 | | | | | | |
| | Fittings .. .. | 30 | 171 | 0 | 0 | | | | | | |
| | &c., &c. | | | | | | | | | | |
| | Uncompleted Contracts— | | | | | | | | | | |
| | No. 47 .. .. | 15 | 560 | 10 | 6 | | | | | | |
| | ,, 51 .. .. | 19 | 435 | 9 | 6 | | | | | | |
| | ,, 60 .. .. | 25 | 514 | 10 | 0 | | | | | | |
| | &c., &c. | | | | | | | | | | |
| | | | 3,060 | 14 | 6 | | | | 3,060 | 14 | 6 |

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## COST SUMMARY.

| No. of Job or Contract. | Title or Description. | Cost Ledger Folio. | Material. | | | Wages. | | | Depart-mental Charges. | | | Distri-butive Charges. | | | Total Cost. | | | Personal Ledger Folio. | Sale or Contract Price. | | | Net Profit. | | | Percentage on Cost. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | | £ | s. | d. | £ | s. | d. | |
| | Department A | 18 | 1110 | 19 | 0 | 900 | 10 | 0 | 270 | 3 | 0 | 228 | 3 | 6 | 2509 | 15 | 6 | 95 | 3137 | 4 | 4 | 627 | 8 | 10 | 25 |
| | ,, B | 25 | 2116 | 18 | 0 | 1360 | 10 | 0 | 340 | 2 | 6 | 382 | 14 | 6 | 4210 | 5 | 0 | 97 | 5052 | 6 | 0 | 842 | 1 | 0 | 20 |
| 20 | Switch Board | 67 | 10 | 10 | 6 | 14 | 5 | 6 | 3 | 11 | 4 | 2 | 10 | 9 | 30 | 18 | 1 | 98 | 37 | 1 | 7 | 6 | 3 | 6 | 20 |
| 50 | Priory Mansions | 90 | 76 | 0 | 6 | 179 | 0 | 0 | 38 | 0 | 0 | 29 | 6 | 0 | 322 | 6 | 6 | 109 | 420 | 0 | 0 | 97 | 13 | 6 | 30 |
| | &c., &c. | | | | | | | | | | | | | | | | | | | | | | | | |

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